

## PROPOSED LEAKING UST (LUST) CASE CLOSURE

The Arizona Department of Environmental Quality (ADEQ) is considering closure of the following leaking underground storage tank (LUST) cases:

**LUST Case File # 0293.09 and .10**  
**Facility ID # 0-005338**  
**Maricopa County**

**Phoenix-Mesa Gateway Airport**  
**5835 S. Sossaman Road**  
**Mesa, Arizona 85212**

This LUST site (the Site) was the former Building 760 (ST035) at Williams Air Force Base (WAFB) which covered 4,043 acres. The majority of the base property has since been converted to the Phoenix-Mesa Gateway Airport, related aviation industrial/commercial facilities, the Arizona State University (ASU) Polytechnic Campus, the Maricopa County Community College Williams Campus, and several other smaller entities since the base was formally closed in 1993. The Site is near Picacho Hall of ASU. The UST owner/operator was identified as the United States Air Force. Bldg. 760 was located in the west-central area of the former WFB, approximately 0.5 miles southeast of the intersection of Williams Field Road and Power Road. Gasoline sales were discontinued in approximately 1986, but lube and oil change services continued until 1993. The UST system was permanently closed between October 1993 and January 1994. Investigation of site impacts was conducted during UST system removal, initial site characterization, and supplemental site characterization has been completed by AMEC Foster Wheeler, Environment & Infrastructure, Inc. (AMEC) for the Air Force. Data collected during these activities indicated that elevated concentrations at the site prior to remediation were relatively isolated to one boring at the former dispenser area (SB-1) and that the contaminant concentrations decreased sharply below 160 feet below ground surface (bgs). The contamination extended to groundwater. Numerous groundwater monitoring wells have been installed between March 1997 and November 2012. Volatile Organic Compound (VOC) contamination was found in the groundwater that exceeded applicable regulatory standards.

In 2010, a soil vapor extraction (SVE) system was installed and operated until October 2013. Most of the contaminants in soil and groundwater have decreased as a result of remediation. 1,2-dichloroethane (1,2-DCA) and methyl tert butyl ether (MTBE) concentrations in the source area wells currently exceeded applicable regulatory standards. The current source area wells are defined as B760-RWD and B760-MW10. Groundwater sampling results showed significant decrease of contamination as of January 2017.

Current data provided by the UST owner/operator, and all other available site information has been used by ADEQ to determine whether remaining levels of contaminants at the site are adequately protective of human health and the environment. A site specific risk assessment and detailed file/information search were also completed. VOC analytical groundwater results show that 1,2-DCA and MTBE concentrations remain above the applicable Tier 1 Corrective Action Standards. All pertinent groundwater data is available in the LUST file.

Based upon the results of remedial activities and site specific information, the above-referenced LUST site is eligible for alternative LUST closure under Arizona Revised Statutes (A.R.S.) §49-1005(E). Arizona Administrative Code (A.A.C.) R18-12-263.04 allows case closure of a LUST site with

groundwater contamination above the Arizona Aquifer Water Quality Standards (AWQS) or Tier 1 Corrective Action Standards. ADEQ has considered the results of a site specific assessment and the rule specific criteria below:

1. *Threatened or impacted drinking water wells:* According to the Arizona Department of Water Resources (ADWR) records, there are no threatened or impacted drinking water wells within 1/2 mile of the site. There are 41 registered wells which are groundwater monitoring wells and remedial wells associated with this site. The site is located within the boundaries of the ASU Polytechnic Campus. AMEC conducted a ¼ mile radius well survey from the B760-RWD well (source area) and there are no active water supply wells. The campus is connected to City of Mesa's water system. According to the City of Mesa's webpage, about 91 percent of Mesa's water comes from surface water sources, the [Salt River Project Canal System](#) and the [Central Arizona Project Canal](#). Surface water is treated at two water treatment plants with a combined capacity of 162 million gallons per day. Nine percent of Mesa's water comes from more than 30 ground water wells that can provide 83 million gallons of water per day. The groundwater contamination at the Site is found only in the Upper Alluvial Unit. Extraction of groundwater in the region is from the Middle Alluvial Unit at depths greater than 500 feet bgs. Down gradient of the ASU Polytechnic Campus is the Phoenix-Mesa Gateway Airport. This area is unlikely to be developed by the City of Mesa for future groundwater sources due to the current and future presence of the airport. The City of Mesa was sent a Water Provider Questionnaire with the request that it be submitted within 30 days. ADEQ has not received any response from the City of Mesa.
2. *Other exposure pathways:* To evaluate any potential inhalation risk, a shallow soil vapor survey was conducted in 2015 around the source area and around Picacho Hall. The risk assessment was performed by AMEC. Chemicals of concern were modeled for both the excess lifetime cancer risk value (ELCR) and the hazard index (HI) or non-carcinogenic health hazard. The ELCR for the petroleum related CoCs is less than  $1 \times 10^{-6}$  and the HI was less than 1.0. These values demonstrate acceptable inhalation risk posed by any remaining VOC contamination. Incidental dermal contact with the groundwater is considered *de minimis* risk. In a ¼ mile receptor survey, there are no schools, day care centers, hospitals or other sensitive populations within ¼ mile of the property. ADEQ also sent SRP a Water Provider Questionnaire. SRP responded that the LUST site is greater than 1 mile from the SRP water service territory, so the questionnaire is not applicable.
3. *Groundwater plume stability:* Groundwater plume stability is demonstrated by the remaining VOC contamination present over a regulatory standard is limited to the source area. The groundwater flow direction is predominantly to the east. The LUST site (ST035) is up gradient of ST-012 of the Williams Air Force Base National Priorities List site. Remediation at ST-012 is expected to continue for 20 or more years.
4. *Characterization of the groundwater plume:* Historic groundwater data is available from 2009 to 2016. The historic high VOC concentrations were found prior to the installation and operation of the SVE system. Benzene concentrations in groundwater have dropped from 4,320 µg/L to well below the AWQS. Ethylbenzene concentrations in groundwater have dropped from 2,500 µg/L to below the AWQS. Toluene concentrations in groundwater have dropped from 12,000 µg/L to below the AWQS. Ethylene dibromide (EDB) concentrations in groundwater have dropped from 0.72 µg/L to below the AWQS. MTBE and 1,2-DCA remain in the groundwater at concentrations that exceed applicable regulatory standards. The depth to water in well B760-RWD was approximately 167 feet bgs in 2016. Dissolved-phase petroleum hydrocarbons have been characterized. ADEQ requested that AMEC conduct another groundwater sampling event on June 20, 2017, but the Air Force refused the request.

5. *Natural Attenuation:* The groundwater plume has not migrated off site as demonstrated by the existing groundwater data. The MTBE contamination in groundwater is limited to the source area and has not migrated past B760-MW10 located approximately 140 feet downgradient. 1,2-DCA contamination in groundwater has migrated away from the source but has not impacted further downgradient monitoring wells. Groundwater field data shows that natural attenuation is occurring as biodegradation. AMEC evaluated the MTBE and 1,2-DCA concentration trends with time. This was done by preparing concentration versus time graphs for monitoring wells located along a downgradient line from the source well (B760-RWD), to include at least one interior well and a furthest downgradient wells. The selected wells to demonstrate plume stability and natural attenuation are as follows: B760-MW10, B760-MW16, B760-MW17 represent interior wells, and B760-MW21S and B760MW22S represent downgradient wells. The trend graphs indicate that the concentrations of MTBE and 1,2-DCA are decreasing in the plume interior wells and also in the furthest downgradient wells. MTBE is very mobile and concentrations of MTBE often decrease as a result of dispersion or dilution as it moves through the ground. MTBE is reported only in the source area well, which indicates that the contamination is a localized, isolated mass trapped in a clay layer. 1,2-DCA is soluble and does not readily absorb to aquifer materials and is very mobile. The elevated concentrations indicated in the source well appear to be located in a zone that is not transmissive and/or connected to bulk aquifer flow.

6. *Removal or control of the source of contamination:* Source control has been completed by the UST system being permanently closed between 1993 and 1994. Soil and groundwater contamination was present, so an active remedial system (SVE) was installed and operated between 2010 and 2013. The remedial system removed approximately 115,000 pounds of total petroleum hydrocarbons as gasoline. The secondary source of hydrocarbons remaining in deep soil and groundwater has been effectively reduced through the use of the remedial system.

7. *Requirements of A.R.S. §49-1005(D) and (E):* The results of the corrective action completed at the site assure protection of public health, welfare and the environment, to the extent practicable, the clean-up activities completed at this site allow for the maximum beneficial use of the site, while being reasonable, necessary and cost effective.

8. *Other information that is pertinent to the LUST case closure approval:* The facility and LUST files were reviewed for information regarding prior cleanup activities, prior site uses and operational history of the UST system prior to removal.

## Groundwater data for B760-RWD

<b>Date</b>	<b>MTBE Tier 1 Remedial Standard is 94 µg/L</b>	<b>1,2-DCA AWQS is 5µg/L</b>	<b>Depth to water (feet)</b>
1/2013	<5.0	1.3	167
2/2013	1.3	0.75	167
5/2013	0.83	0.75	167
8/2013	0.69	0.8	167
11/2013	0.49	<1.0	167
2/2014	3.1/3.3	0.5/0.04	167
5/2014	<b>380/390*</b> duplicate samples	<b>19/19</b>	167
8/2014	13	1.5	167
11/2014	<b>2,900</b>	<b>110</b>	167
2/2015	<b>4,200</b>	<b>170</b>	167
5/2015	<b>3,600/3,400*</b> duplicate samples	<b>130/140</b>	167
11/2015	<b>2,700</b>	<b>130</b>	167
5/2016	<b>2,800/2,900*</b> duplicate samples	<b>140/150</b>	167

## Groundwater Data for B760-MW10

<b>Date</b>	<b>1,2-DCA AWQS is 5µg/L</b>	<b>Depth to water (feet)</b>
7/2008	<0.5	150
5/2009	<b>13.7</b>	149
5/2010	<b>23</b>	146
5/2011	<b>41.3</b>	144
5/2012	<b>24</b>	144
5/2013	<b>34</b>	143.2
11/2013	<b>33/31*</b> duplicate samples	142.69
2/2014	<b>33</b>	142.4
5/2014	<b>36</b>	142.12
8/2014	<b>34/26*</b> duplicate samples	142
11/2014	<b>27</b>	142
2/2015	<b>27</b>	142
11/2015	<b>11</b>	142
5/2016	<b>7.6</b>	141.21

Site specific information concerning this closure is available for review during normal business hours at the ADEQ Records Center <http://www.azdeq.gov/function/assistance/records.html> , 1110 W. Washington St., Suite 140, Phoenix, AZ 85007. ADEQ welcomes comments on the proposed LUST case closure. Please call the Records Center at 602-771-4380 to schedule an appointment. A 30-day public comment period is in effect commencing **May 7, 2018 and ending, June 7, 2018**. Comments should be submitted in writing to the Arizona Department of Environmental Quality, Waste Programs Division, and Attention: Debi Goodwin, 1110 W. Washington Street, Phoenix, AZ 85007.

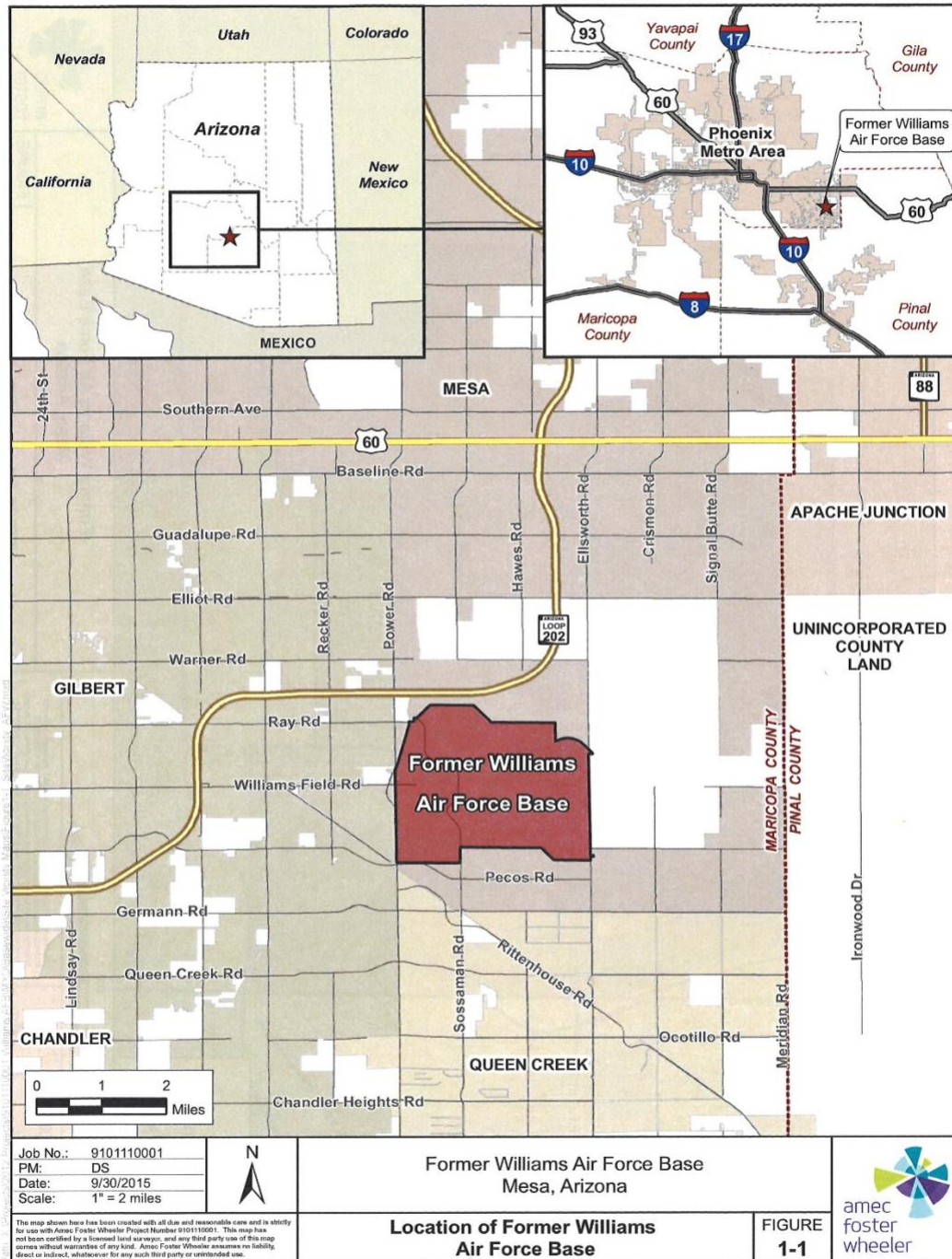
If sufficient public interest is demonstrated during the public comment period, ADEQ may announce and hold a public meeting. ADEQ will consider all submitted written comments and reserves the right to respond to those comments following the public comment period. For more information on this notice, please contact the Sr. Risk Assessor, Debi Goodwin at (602) 771-4453 or at [dg1@azdeq.gov](mailto:dg1@azdeq.gov).

Copies of the cited statutes and rules can be found at:  
<http://www.azleg.gov/ArizonaRevisedStatutes.asp?Title=49>, and  
[http://www.azsos.gov/public\\_services/Title\\_18/18-12.htm](http://www.azsos.gov/public_services/Title_18/18-12.htm)

ADEQ will take reasonable measures to provide access to department services to individuals with limited ability to speak, write, or understand English and/or to those with disabilities. Requests for language interpretation services or for disability accommodations must be made at least 48 hours in advance by contacting: 7-1-1 for TDD; (602) 771-2215 for Disability Accessibility; or Ian Bingham, Title VI Nondiscrimination Coordinator at (602) 771-4322 or [idb@azdeq.gov](mailto:idb@azdeq.gov).

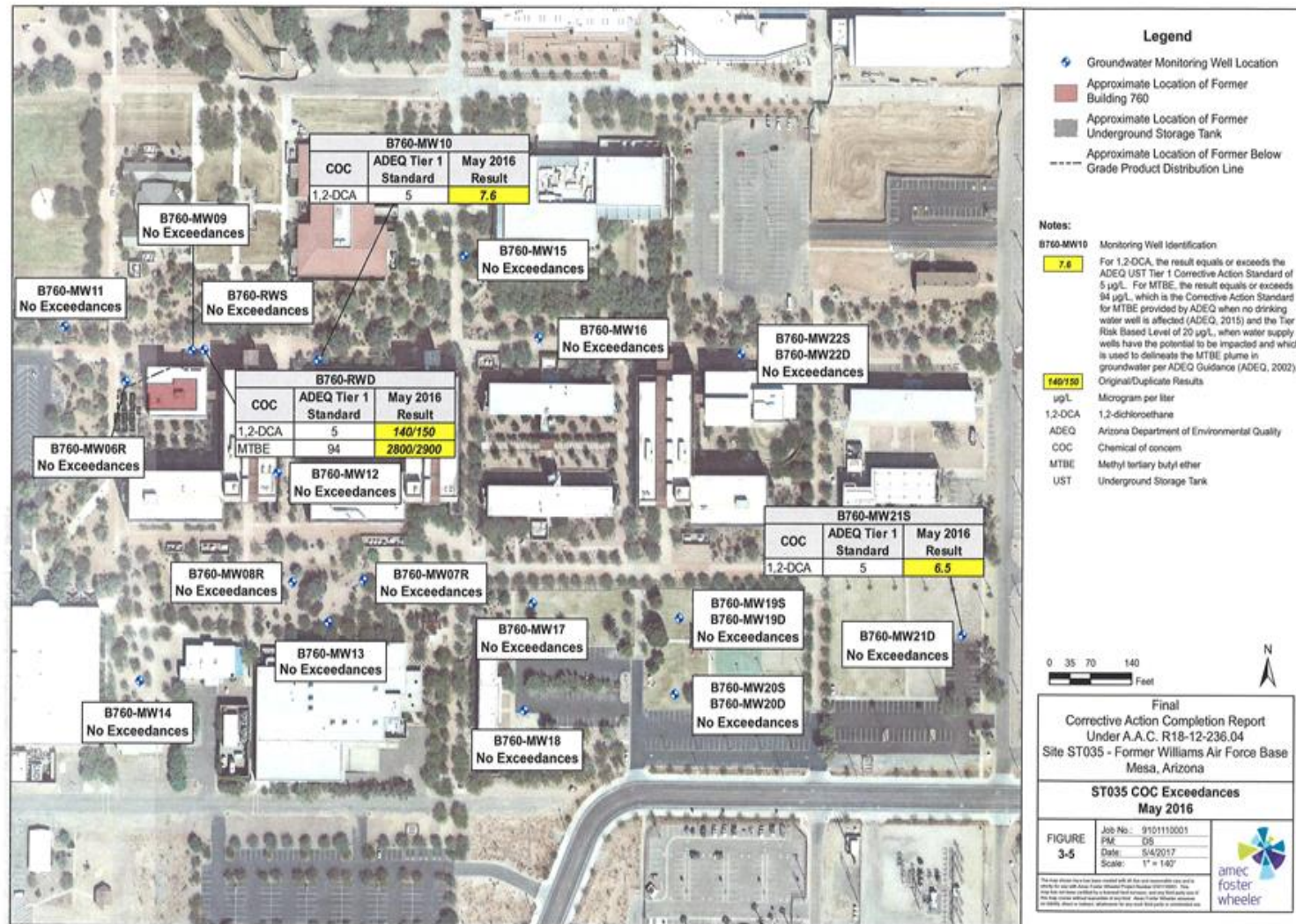
ADEQ tomará medidas razonables para proveer acceso a los servicios del departamento para personas con capacidad limitada para hablar, escribir o entender Inglés y / o para las personas con discapacidad. Las solicitudes de servicios de interpretación del lenguaje o de alojamiento de discapacidad deben hacerse por lo menos 48 horas de antelación poniéndose en contacto con Ian Bingham, Title VI Nondiscrimination Coordinator al (602) 771-4322 o [idb@azdeq.gov](mailto:idb@azdeq.gov).





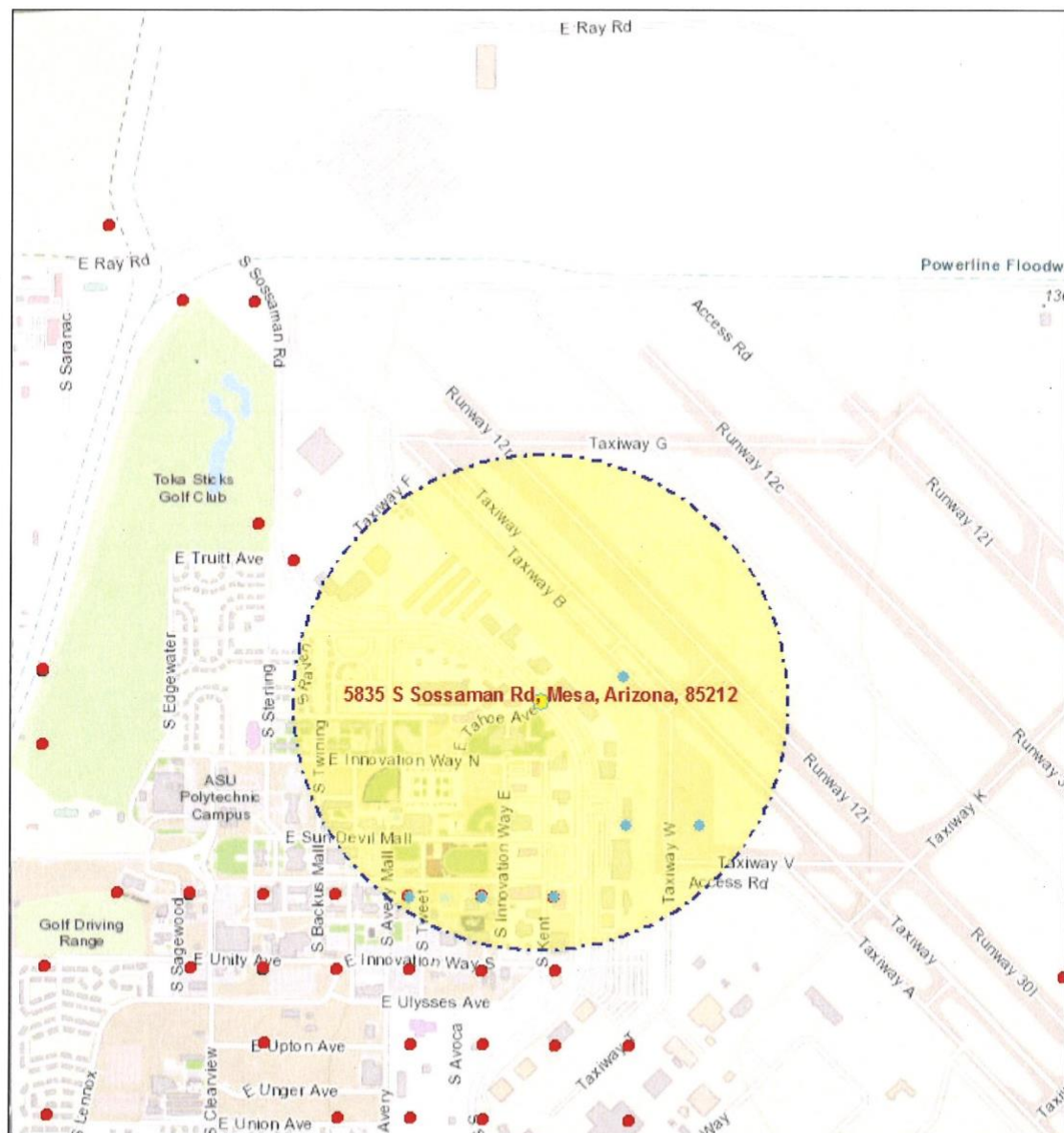








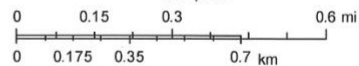
## Bldg. 760/ST035



March 5, 2018

-  Well Registry  
 County

1:18,056



Arizona Department of Water Resources  
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community

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